

What Is Claimed Is:

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1 1. A satellite constellation comprising:
 2 a plurality of satellites, each of said
 3 satellites having an RF ground link for communicating
 4 with a ground station and an optical link for
 5 communication with at least one of the plurality of
 6 satellites;
 7 each of said satellites having a
 8 reconfigurable optical transmitter for sending and
 9 receiving data streams, each reconfigurable optical
 10 transmitter having a first optical carrier associated
 11 therewith and a reconfigurable optical receiver;
 12 said plurality of satellites arranged to
 13 have a first subset of satellites, said first
 14 satellite configured to communicate;
 15 said plurality of satellites arranged to
 16 have a second subset of satellites having at least
 17 one different satellite than that of said first
 18 subset, said second subset of satellites are
 19 configured to communicate.

Sub D1

1 2. A satellite constellation as recited
 2 in claim 1 wherein each of said plurality of
 3 satellites comprises a communications table.

Sub C2

1 3. A satellite constellation as recited
 2 in claim 2 wherein said communications table has

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Sub D1)

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Sub D1

orbit.

8. A satellite constellation as recited in claim 1 wherein said satellites are in medium earth orbit.

9. A satellite constellation as recited in claim 1 wherein said first and second subsets are aligned with a landmass.

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1 9. A satellite constellation as recited
2 in claim 1 wherein said first and second subsets are
3 aligned with a landmass.

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11. A global communication system comprising:
a plurality of satellite stations;
a first subset of said satellite stations forming a network over a first plurality of optical carriers for intercommunication;
said first subset having optical carriers associated with other satellite stations in said first subset.

9 said first subset having a second plurality
10 of optical carriers assigned thereto for
11 communicating with other satellites outside of said
12 first subset.

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sub C3

3 comprises a reconfigurable transmitter and a
4 reconfigurable receiver.

1 15. A global communications system as
2 recited in claim 11 wherein said reconfigurable
3 transmitter comprises an array of laser diodes.

1 16. A global communications system as
2 recited in claim 11 wherein said optical transmitter
3 is tunable to generate a plurality of wavelengths.

1 *Sub B1* } ~~17.~~ A method of communicating within a
2 satellite communications comprising the steps of:
3 deploying a plurality of satellites;
4 grouping a first subset of the plurality of
5 satellites into a first local area network;
6 forming a plurality of routes between the
7 satellites in the first local area network; and
8 assigning an optical carrier for each
9 route.

1 *Sub D1* } 18. A method as recited in claim 17
2 further comprising the steps of forming a second
3 local area network by grouping a second subset of the
4 plurality of satellites and interconnecting the first
5 local area network and the second local area network
6 to form a wide area network.

1 19. A method as recited in claim 17
2 wherein the step of assigning an optical carrier
3 comprises the step of obtaining the optical carrier
4 and route from a respective optical wavelength
5 selector and connection table.

1 20. A method as recited in claim 17
2 wherein the step of assigning comprises the step of
3 reusing the optical carriers.

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